



Attorney Docket No.: 42P17819

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

KAVALIEROS, Jack

Application No: 10/748,383

Filed: December 29, 2003

For: THE METHOD FOR
INTEGRATING REPLACEMENTS
METAL GATE STRUCTURES

)
) Examiner: CHAUDHARI, Chandra P.

)
) Art Unit: 2891

Mail Stop Amendment

Assistant Commissioner For Patents

P.O. Box 1450

Alexandria, VA 22313-1450

RESPONSE

In response to the Election/Restriction Office Action mailed June 17, 2005, Applicant respectfully requests reconsideration of the above-referenced patent application in light of the following.

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313 on:

7-15-05

Date of Deposit

Gayle Bekish

Name of Person Mailing Correspondence

Gayle

Signature

7-15-05

Date

CLAIM LISTING

1. (Original) A method comprising:
forming a substrate core by:
attaching a first dielectric layer to a second conductive layer of a
thin film capacitor; and
attaching a second dielectric layer to a first conductive layer of the
thin film capacitor.
2. (Original) The method of claim 1 wherein the first and second dielectric layers
comprise a prepreg layer disposed on a core material.
3. (Original) The method of claim 1 wherein the first and the second dielectric layers
comprises an organic material.
4. (Original) The method of claim 1 wherein the thin film capacitor comprises a
capacitor dielectric layer disposed between the first conductive layer and the second
conductive layer.
5. (Original) The method of claim 4 wherein the capacitor dielectric layer comprises
a thickness between about 100 to about 500 nanometers, and wherein the first and the
second conductive layers comprise a thickness between about 5 to about 50 microns.

6. (Original) The method of claim 4 wherein the capacitor dielectric layer comprises a dielectric constant greater than about 8.
7. (Original) The method of claim 4 wherein the capacitor dielectric layer comprises a material selected from the group consisting of hafnium oxide, lanthanum oxide, zirconium oxide, zirconium silicon oxide, titanium oxide, tantalum oxide, barium strontium titanium oxide, barium titanium oxide, strontium titanium oxide, yttrium oxide, aluminum oxide, lead scandium tantalum oxide, and lead zinc niobate.
8. (Original) The method of claim 1 further comprising laminating the first dielectric layer, the thin film capacitor and the second dielectric together.
9. (Original) The method of claim 1 further comprising forming at least one opening through the substrate core.
10. (Original) A method comprising:
forming a substrate core by:
attaching a first plurality of conductive pads disposed on a first thin film capacitor to a first side of a dielectric layer; and
attaching a second side of the dielectric layer to a second plurality of conductive pads disposed on a second thin film capacitor.

11. (Original) The method of claim 10 wherein the first thin film capacitor comprises a capacitor dielectric layer disposed between the first plurality of conductive pads and a first conductive layer.
12. (Original) The method of claim 11 wherein the capacitor dielectric layer comprises a dielectric constant greater than about 8.
13. (Original) The method of claim 10 wherein the dielectric layer comprises a prepreg layer disposed on a core material, wherein the core material comprises a first plurality of core pads disposed on a first side of the core material, and a second plurality of core pads disposed on a second side of the core material.
14. (Original) The method of claim 10 further comprising forming at least one opening through the substrate core.
15. (Original) A structure comprising:
a substrate core comprising :
a first side of a first dielectric layer disposed on a first conductive layer of a first thin film capacitor; and
a first side of a second dielectric layer disposed on a second conductive layer of the first thin film capacitor.

16. (Original) The structure of claim 15 wherein the first thin film capacitor comprises a capacitor dielectric layer disposed between the first conductive layer and the second conductive layer.
17. (Original) The structure of claim 16 wherein the capacitor dielectric layer comprises a thickness between about 100 and about 500 nanometers, and wherein the first and second conductive layers comprise a thickness between about 5 to about 50 microns.
18. (Withdrawn) The structure of claim 16 wherein the capacitor dielectric layer comprises a dielectric constant greater than about 8.
19. (Withdrawn) The structure of claim 16 wherein the capacitor dielectric layer comprises a material selected from the group consisting of hafnium oxide, lanthanum oxide, zirconium oxide, zirconium silicon oxide, titanium oxide, tantalum oxide, barium strontium titanium oxide, barium titanium oxide, strontium titanium oxide, yttrium oxide, aluminum oxide, lead scandium tantalum oxide, and lead zinc niobate.
20. (Withdrawn) The structure of claim 15 wherein the first and the second dielectric layers comprise a prepreg layer disposed on a core material, wherein the core material comprises a first plurality of core pads disposed on a first side of the core material, and a second plurality of core pads disposed on a second side of the core material.

21. (Withdrawn) The structure of claim 20 wherein the core material comprises an organic core.
22. (Withdrawn) The structure of claim 15 further comprising a second thin film capacitor disposed on a second side of the second dielectric layer and a third thin film capacitor disposed on a second side of the first dielectric layer.
23. (Withdrawn) The structure of claim 15 further comprising at least one opening disposed through the substrate core.
24. (Withdrawn) The structure of claim 15 wherein the first and the second thin film capacitor comprise a capacitance between about 2 to about 4 micro Farads per centimeter squared.
25. (Withdrawn) A system comprising:
- a substrate core comprising:
 - a first dielectric layer disposed on a first conductive layer of a thin film capacitor;
 - a second dielectric layer disposed on a second conductive layer of the thin film capacitor;
 - a bus communicatively coupled to the substrate core; and
 - a DRAM communicatively coupled to the bus.

26. (Withdrawn) The system of claim 25 wherein the thin film capacitor comprises a capacitor dielectric layer disposed between the first conductive layer and the second conductive layer.

27. (Withdrawn) The system of claim 26 wherein the capacitor dielectric layer comprises a dielectric constant greater than about 8.

28. (Withdrawn) The system of claim 27 wherein the capacitor dielectric layer comprises a material selected from the group consisting of hafnium oxide, lanthanum oxide, zirconium oxide, zirconium silicon oxide, titanium oxide, tantalum oxide, barium strontium titanium oxide, barium titanium oxide, strontium titanium oxide, yttrium oxide, aluminum oxide, lead scandium tantalum oxide, and lead zinc niobate.

REMARKS


With this Response, Applicant elects claims 1-17, without traverse. Thus, Applicant respectfully requests that claims 8-28 be withdrawn, leaving claims 1-17 pending. The Examiner is respectfully requested to contact the undersigned by telephone if such contact would further the examination of the above-referenced application.

Please charge any shortages and credit any overcharges to our Deposit Account number 02-2666.

Respectfully submitted,
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN, LLP

Date:

July 15, 2005



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